



## RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/820,583  
Source: IFW  
Date Processed by STIC: 4/16/04

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

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- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT

MARK SPENCER, TELEPHONE: 703-308-4212; FAX: 703-308-4221

Effective 12/13/03: TELEPHONE: 571-272-2510; FAX: 571-273-0221

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER  
VERSION 4.1 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND  
TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker/chkr41note.htm>

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Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry directly to (EFFECTIVE 12/01/03):  
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office, Box Sequence, Room 4B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Revised 10/08/03



IFWO

## RAW SEQUENCE LISTING

DATE: 04/16/2004

PATENT APPLICATION: US/10/820,583

TIME: 16:19:25

Input Set : A:\HO-P02673US1.txt

Output Set: N:\CRF4\04162004\J820583.raw

3 <110> APPLICANT: Schneider, Michael  
 4 Oh, Hidemasa  
 6 <120> TITLE OF INVENTION: Modulators of Telomere Stability  
 8 <130> FILE REFERENCE: HO-P02673US1  
 C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/820,583  
 11 <141> CURRENT FILING DATE: 2004-04-08  
 13 <150> PRIOR APPLICATION NUMBER: US 60/461,095  
 14 <151> PRIOR FILING DATE: 2003-04-08  
 16 <160> NUMBER OF SEQ ID NOS: 24  
 18 <170> SOFTWARE: PatentIn version 3.1  
 20 <210> SEQ ID NO: 1  
 21 <211> LENGTH: 500  
 22 <212> TYPE: PRT  
 23 <213> ORGANISM: Human  
 25 <400> SEQUENCE: 1  
 27 Met Ala Gly Gly Gly Gly Ser Ser Asp Gly Ser Gly Arg Ala Ala Gly  
 28 1 5 10 15  
 31 Arg Arg Ala Ser Arg Ser Ser Gly Arg Ala Arg Arg Gly Arg His Glu  
 32 20 25 30  
 35 Pro Gly Leu Gly Gly Pro Ala Glu Arg Gly Ala Gly Glu Ala Arg Leu  
 36 35 40 45  
 39 Glu Glu Ala Val Asn Arg Trp Val Leu Lys Phe Tyr Phe His Glu Ala  
 40 50 55 60  
 43 Leu Arg Ala Phe Arg Gly Ser Arg Tyr Gly Asp Phe Arg Gln Ile Arg  
 44 65 70 75 80  
 47 Asp Ile Met Gln Ala Leu Leu Val Arg Pro Leu Gly Lys Glu His Thr  
 48 85 90 95  
 51 Val Ser Arg Leu Leu Arg Val Met Gln Cys Leu Ser Arg Ile Glu Glu  
 52 100 105 110  
 55 Gly Glu Asn Leu Asp Cys Ser Phe Asp Met Glu Ala Glu Leu Thr Pro  
 56 115 120 125  
 59 Leu Glu Ser Ala Ile Asn Val Leu Glu Met Ile Lys Thr Glu Phe Thr  
 60 130 135 140  
 63 Leu Thr Glu Ala Val Val Glu Ser Ser Arg Lys Leu Val Lys Glu Ala  
 64 145 150 155 160  
 67 Ala Val Ile Ile Cys Ile Lys Asn Lys Glu Phe Glu Lys Ala Ser Lys  
 68 165 170 175  
 71 Ile Leu Lys Lys His Met Ser Lys Asp Pro Thr Thr Gln Lys Leu Arg  
 72 180 185 190  
 75 Asn Asp Leu Leu Asn Ile Ile Arg Glu Lys Asn Leu Ala His Pro Val  
 76 195 200 205  
 79 Ile Gln Asn Phe Ser Tyr Glu Thr Phe Gln Gln Lys Met Leu Arg Phe  
 80 210 215 220

pp 6-7  
 Does Not Comply  
 Corrected Diskette Needed

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PATENT APPLICATION: US/10/820,583

DATE: 04/16/2004

TIME: 16:19:25

Input Set : A:\HO-P02673US1.txt

Output Set : N:\CRF4\04162004\J820583.raw

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83 Leu Glu Ser His Leu Asp Asp Ala Glu Pro Tyr Leu Leu Thr Met Ala
84 225                230                235                240
87 Lys Lys Ala Leu Lys Ser Glu Ser Ala Ala Ser Ser Thr Gly Lys Glu
88                245                250                255
91 Asp Lys Gln Pro Ala Pro Gly Pro Val Glu Lys Pro Pro Arg Glu Pro
92                260                265                270
95 Ala Arg Gln Leu Arg Asn Pro Pro Thr Thr Ile Gly Met Met Thr Leu
96                275                280                285
99 Lys Ala Ala Phe Lys Thr Leu Ser Gly Ala Gln Asp Ser Glu Ala Ala
100                290                295                300
103 Phe Ala Lys Leu Asp Gln Lys Asp Leu Val Leu Pro Thr Gln Ala Leu
104 305                310                315                320
107 Pro Ala Ser Pro Ala Leu Lys Asn Lys Arg Pro Arg Lys Asp Glu Asn
108                325                330                335
111 Glu Ser Ser Ala Pro Ala Asp Gly Glu Gly Gly Ser Glu Leu Gln Pro
112                340                345                350
115 Lys Asn Lys Arg Met Thr Ile Ser Arg Leu Val Leu Glu Glu Asp Ser
116                355                360                365
119 Gln Ser Thr Glu Pro Ser Ala Gly Leu Asn Ser Ser Gln Glu Ala Ala
120                370                375                380
123 Ser Ala Pro Pro Ser Lys Pro Thr Val Leu Asn Gln Pro Leu Pro Gly
124 385                390                395                400
127 Glu Lys Asn Pro Lys Val Pro Lys Gly Lys Trp Asn Ser Ser Asn Gly
128                405                410                415
131 Val Glu Glu Lys Glu Thr Trp Val Glu Glu Asp Glu Leu Phe Gln Val
132                420                425                430
135 Gln Ala Ala Pro Asp Glu Asp Ser Thr Thr Asn Ile Thr Lys Lys Gln
136                435                440                445
139 Lys Trp Thr Val Glu Glu Ser Glu Trp Val Lys Ala Gly Val Gln Lys
140                450                455                460
143 Tyr Gly Glu Gly Asn Trp Ala Ala Ile Ser Lys Asn Tyr Pro Phe Val
144 465                470                475                480
147 Asn Arg Thr Ala Val Met Ile Lys Asp Arg Trp Arg Thr Met Lys Arg
148                485                490                495
151 Leu Gly Met Asn
152                500
155 <210> SEQ ID NO: 2
156 <211> LENGTH: 543
157 <212> TYPE: PRT
158 <213> ORGANISM: Human
160 <400> SEQUENCE: 2
162 Met Ser Arg Glu Ser Asp Val Glu Ala Gln Gln Ser His Gly Ser Ser
163 1                5                10                15
166 Ala Cys Ser Gln Pro His Gly Ser Val Thr Gln Ser Gln Gly Ser Ser
167                20                25                30
170 Ser Gln Ser Gln Gly Ile Ser Ser Ser Ser Thr Ser Thr Met Pro Asn
171                35                40                45
174 Ser Ser Gln Ser Ser His Ser Ser Ser Gly Thr Leu Ser Ser Leu Glu
175                50                55                60

```

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Input Set : A:\HO-P02673US1.txt

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178 Thr Val Ser Thr Gln Glu Leu Tyr Ser Ile Pro Glu Asp Gln Glu Pro
179 65 70 75 80
182 Glu Asp Gln Glu Pro Glu Glu Pro Thr Pro Ala Pro Trp Ala Arg Leu
183 85 90 95
186 Trp Ala Leu Gln Asp Gly Phe Ala Asn Leu Glu Cys Val Asn Asp Asn
187 100 105 110
190 Tyr Trp Phe Gly Arg Asp Lys Ser Cys Glu Tyr Cys Phe Asp Glu Pro
191 115 120 125
194 Leu Leu Lys Arg Thr Asp Lys Tyr Arg Thr Tyr Ser Lys Lys His Phe
195 130 135 140
198 Arg Ile Phe Arg Glu Val Gly Pro Lys Asn Ser Tyr Ile Ala Tyr Ile
199 145 150 155 160
202 Glu Asp His Ser Gly Asn Gly Thr Phe Val Asn Thr Glu Leu Val Gly
203 165 170 175
206 Lys Gly Lys Arg Arg Pro Leu Asn Asn Asn Ser Glu Ile Ala Leu Ser
207 180 185 190
210 Leu Ser Arg Asn Lys Val Phe Val Phe Phe Asp Leu Thr Val Asp Asp
211 195 200 205
214 Gln Ser Val Tyr Pro Lys Ala Leu Arg Asp Glu Tyr Ile Met Ser Lys
215 210 215 220
218 Thr Leu Gly Ser Gly Ala Cys Gly Glu Val Lys Leu Ala Phe Glu Arg
219 225 230 235 240
222 Lys Thr Cys Lys Lys Val Ala Ile Lys Ile Ile Ser Lys Arg Lys Phe
223 245 250 255
226 Ala Ile Gly Ser Ala Arg Glu Ala Asp Pro Ala Leu Asn Val Glu Thr
227 260 265 270
230 Glu Ile Glu Ile Leu Lys Lys Leu Asn His Pro Cys Ile Ile Lys Ile
231 275 280 285
234 Lys Asn Phe Phe Asp Ala Glu Asp Tyr Tyr Ile Val Leu Glu Leu Met
235 290 295 300
238 Glu Gly Gly Glu Leu Phe Asp Lys Val Val Gly Asn Lys Arg Leu Lys
239 305 310 315 320
242 Glu Ala Thr Cys Lys Leu Tyr Phe Tyr Gln Met Leu Leu Ala Val Gln
243 325 330 335
246 Tyr Leu His Glu Asn Gly Ile Ile His Arg Asp Leu Lys Pro Glu Asn
247 340 345 350
250 Val Leu Leu Ser Ser Gln Glu Glu Asp Cys Leu Ile Lys Ile Thr Asp
251 355 360 365
254 Phe Gly His Ser Lys Ile Leu Gly Glu Thr Ser Leu Met Arg Thr Leu
255 370 375 380
258 Cys Gly Thr Pro Thr Tyr Leu Ala Pro Glu Val Leu Val Ser Val Gly
259 385 390 395 400
262 Thr Ala Gly Tyr Asn Arg Ala Val Asp Cys Trp Ser Leu Gly Val Ile
263 405 410 415
266 Leu Phe Ile Cys Leu Ser Gly Tyr Pro Pro Phe Ser Glu His Arg Thr
267 420 425 430
270 Gln Val Ser Leu Lys Asp Gln Ile Thr Ser Gly Lys Tyr Asn Phe Ile
271 435 440 445
274 Pro Glu Val Trp Ala Glu Val Ser Glu Lys Ala Leu Asp Leu Val Lys

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TIME: 16:19:25

Input Set : A:\HO-P02673US1.txt

Output Set: N:\CRF4\04162004\J820583.raw

```

275      450      455      460
278 Lys Leu Leu Val Val Asp Pro Lys Ala Arg Phe Thr Thr Glu Glu Ala
279 465      470      475      480
282 Leu Arg His Pro Trp Leu Gln Asp Glu Asp Met Lys Arg Lys Phe Gln
283      485      490      495
286 Asp Leu Leu Ser Glu Glu Asn Glu Ser Thr Ala Leu Pro Gln Val Leu
287      500      505      510
290 Ala Gln Pro Ser Thr Ser Arg Lys Arg Pro Arg Glu Gly Glu Ala Glu
291      515      520      525
294 Gly Ala Glu Thr Thr Lys Arg Pro Ala Val Cys Ala Ala Val Leu
295      530      535      540
298 <210> SEQ ID NO: 3
299 <211> LENGTH: 514
300 <212> TYPE: PRT
301 <213> ORGANISM: Human
303 <400> SEQUENCE: 3
305 Met Ser Arg Glu Ser Asp Val Glu Ala Gln Gln Ser His Gly Ser Ser
306 1      5      10      15
309 Ala Cys Ser Gln Pro His Gly Ser Val Thr Gln Ser Gln Gly Ser Ser
310      20      25      30
313 Ser Gln Ser Gln Gly Ile Ser Ser Ser Ser Thr Ser Thr Met Pro Asn
314      35      40      45
317 Ser Ser Gln Ser Ser His Ser Ser Ser Gly Thr Leu Ser Ser Leu Glu
318      50      55      60
321 Thr Val Ser Thr Gln Glu Leu Tyr Ser Ile Pro Glu Asp Gln Glu Pro
322 65      70      75      80
325 Glu Asp Gln Glu Pro Glu Glu Pro Thr Pro Ala Pro Trp Ala Arg Leu
326      85      90      95
329 Trp Ala Leu Gln Asp Gly Phe Ala Asn Leu Glu Cys Val Asn Asp Asn
330      100      105      110
333 Tyr Trp Phe Gly Arg Asp Lys Ser Cys Glu Tyr Cys Phe Asp Glu Pro
334      115      120      125
337 Leu Leu Lys Arg Thr Asp Lys Tyr Arg Thr Tyr Ser Lys Lys His Phe
338      130      135      140
341 Arg Ile Phe Arg Glu Val Gly Pro Lys Asn Ser Tyr Ile Ala Tyr Ile
342 145      150      155      160
345 Glu Asp His Ser Gly Asn Gly Thr Phe Val Asn Thr Glu Leu Val Gly
346      165      170      175
349 Lys Gly Lys Arg Arg Pro Leu Asn Asn Asn Ser Glu Ile Ala Leu Ser
350      180      185      190
353 Leu Ser Arg Asn Lys Val Phe Val Phe Phe Asp Leu Thr Val Asp Asp
354      195      200      205
357 Gln Ser Val Tyr Pro Lys Ala Leu Arg Asp Glu Tyr Ile Met Ser Lys
358      210      215      220
361 Thr Leu Gly Ser Gly Ala Cys Gly Glu Val Lys Leu Ala Phe Glu Arg
362 225      230      235      240
365 Lys Thr Cys Lys Lys Val Ala Ile Lys Ile Ile Ser Lys Arg Lys Phe
366      245      250      255
369 Ala Ile Gly Ser Ala Arg Glu Ala Asp Pro Ala Leu Asn Val Glu Thr

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PATENT APPLICATION: US/10/820,583

DATE: 04/16/2004

TIME: 16:19:25

Input Set : A:\HO-P02673US1.txt

Output Set: N:\CRF4\04162004\J820583.raw

```

370          260          265          270
373 Glu Ile Glu Ile Leu Lys Lys Leu Asn His Pro Cys Ile Ile Lys Ile
374          275          280          285
377 Lys Asn Phe Phe Asp Ala Glu Asp Tyr Tyr Ile Val Leu Glu Leu Met
378          290          295          300
381 Glu Gly Gly Glu Leu Phe Asp Lys Val Val Gly Asn Lys Arg Leu Lys
382 305          310          315          320
385 Glu Ala Thr Cys Lys Leu Tyr Phe Tyr Gln Met Leu Leu Ala Val Gln
386          325          330          335
389 Ile Thr Asp Phe Gly His Ser Lys Ile Leu Gly Glu Thr Ser Leu Met
390          340          345          350
393 Arg Thr Leu Cys Gly Thr Pro Thr Tyr Leu Ala Pro Glu Val Leu Val
394          355          360          365
397 Ser Val Gly Thr Ala Gly Tyr Asn Arg Ala Val Asp Cys Trp Ser Leu
398          370          375          380
401 Gly Val Ile Leu Phe Ile Cys Leu Ser Gly Tyr Pro Pro Phe Ser Glu
402 385          390          395          400
405 His Arg Thr Gln Val Ser Leu Lys Asp Gln Ile Thr Ser Gly Lys Tyr
406          405          410          415
409 Asn Phe Ile Pro Glu Val Trp Ala Glu Val Ser Glu Lys Ala Leu Asp
410          420          425          430
413 Leu Val Lys Lys Leu Leu Val Val Asp Pro Lys Ala Arg Phe Thr Thr
414          435          440          445
417 Glu Glu Ala Leu Arg His Pro Trp Leu Gln Asp Glu Asp Met Lys Arg
418          450          455          460
421 Lys Phe Gln Asp Leu Leu Ser Glu Glu Asn Glu Ser Thr Ala Leu Pro
422 465          470          475          480
425 Gln Val Leu Ala Gln Pro Ser Thr Ser Arg Lys Arg Pro Arg Glu Gly
426          485          490          495
429 Glu Ala Glu Gly Ala Glu Thr Thr Lys Arg Pro Ala Val Cys Ala Ala
430          500          505          510
433 Val Leu
437 <210> SEQ ID NO: 4
438 <211> LENGTH: 1233
439 <212> TYPE: PRT
440 <213> ORGANISM: human
442 <400> SEQUENCE: 4
444 Met Ala Asn Asp Ser Pro Ala Lys Ser Leu Val Asp Ile Asp Leu Ser
445 1          5          10          15
448 Ser Leu Arg Asp Pro Ala Gly Ile Phe Glu Leu Val Glu Val Val Gly
449          20          25          30
452 Asn Gly Thr Tyr Gly Gln Val Tyr Lys Gly Arg His Val Lys Thr Val
453          35          40          45
456 Thr Ala Ala Ile Lys Val Met Asp Val Thr Glu Asp Glu Glu Glu Glu
457          50          55          60
460 Ile Thr Leu Glu Ile Asn Met Leu Lys Lys Tyr Ser His His Arg Asn
461 65          70          75          80
464 Ile Ala Thr Tyr Tyr Gly Ala Phe Ile Lys Lys Ser Pro Pro Gly His
465          85          90          95

```

<210> 24  
<211> 23  
<212> PRT  
<213> ARTIFICIAL SEQUENCE

*Artificial Sequence*

*needs explanation in 2207-2237 section*

<400> 24

*see p. 7*

Lys Lys Lys Val Ser Arg Ser Gly Leu Tyr Arg Ser Pro Ser Met Pro  
1 5 10 15

*for error  
explanation*

Glu Asn Leu Asn Arg Pro Arg  
20

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/820,583

DATE: 04/16/2004  
TIME: 16:19:26

Input Set : A:\HO-P02673US1.txt  
Output Set: N:\CRF4\04162004\J820583.raw

*error explanation*

Use of <220> Feature (NEW RULES):

Sequence(s) \_\_ are missing the <220> Feature and associated headings.

Use of <220> to <223> is MANDATORY if <213> ORGANISM is "Artificial Sequence" or "Unknown". Please explain source of genetic material in <220> to <223> section (See "Federal Register," 6/01/98, Vol. 63, No. 104, pp.29631-32) (Sec.1.823 of new Rules)

Seq#:24



**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/820,583

DATE: 04/16/2004

TIME: 16:19:26

Input Set : A:\HO-P02673US1.txt

Output Set: N:\CRF4\04162004\J820583.raw

L:10 M:270 C: Current Application Number differs, Replaced Current Application Number  
L:3978 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:24  
L:3980 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:24, <213>  
ORGANISM:Artificial Sequence  
L:3980 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:24, <213>  
ORGANISM:Artificial Sequence  
L:3980 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:24,Line#:3980